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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/606,025	06/29/2000	Ronald L. Dammann	219.38327X00(P8678	8110
7590	10/28/2004		EXAMINER	
SCHWEGMAN LUNDBERG WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			NGUYEN, BRIAN D	
			ART UNIT	PAPER NUMBER
			2661	

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/606,025

Applicant(s)

DAMMANN ET AL.

Examiner

Brian D Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Oath/Declaration

1. Exhibit A mentioned in the declaration under 37 CFR 1.131 has not been received. The applicant is requested to resubmit the Exhibit A in responding to this Office Action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 27-31, 34-36, and 43-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raza (6,640,300).

Regarding claims 27-30 and 34-36, Raza discloses a multi-port buffer (50 of figure 2 and 100 of figure 3b) comprising a plurality of buffer units, each including its own memory (FIFO 52 and FIFO 54 of figure 2 for example) having a write block and a read block (see write/read interface of figure 3a for example), its own dedicated port input logic and dedicated port output logic (see thick input/output lines in figure 2, for example). Although Raza teaches an output port from one FIFO is connected to an input port of another FIFO to expand the depth of the FIFO (see the connections between 91 and 90 and 93 and 92 and col. 2, lines 42-44), Raza does not specifically disclose the use of a multiplexer to connect and control the flow of data from different inputs to a FIFO. However, Raza discloses that additional circuitry may be required to select one of the queues (see col. 4, lines 57-59). Therefore, it would have been obvious to a

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person of ordinary skill in the art at the time the invention was made to use a multiplexer in the system of Raza to control the flow of data from different inputs to a FIFO so that all the available FIFOs can be used to store data in order to improve system efficiency. .

Regarding claim 31, Raza discloses the buffer memories are physical discrete (see FIFOs in figures 2 and 3b).

Regarding claims 43-49, claims 43-49 are method claims that have substantially all the limitations of the respective apparatus claims 27-31 and 34-36. Therefore, they are subject to the same rejection.

4. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raza (6,640,300) in view of Hendel (6,633,946).

Regarding claims 32 and 33, Raza does not explicitly disclose the multi-port buffer including a cross-bar switch. However, a multi-port buffer including a cross-bar switch is well known. Hendel discloses a cross-bar switch coupled between the memory and the port output logic (see figure 5; col. 6, lines 44-53). Therefore, it would have been obvious to one skilled in the art to have a multi-port buffer including a cross-bar switch so that data from one input port can be routed to any of the output ports.

5. Claims 37-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hendel (6,633,946) in view of Raza (6,640,300).

Regarding claims 37, 39, and 41, Hendel discloses a system comprising a host computer; a plurality of channel to communicate data to a network; a channel adapter including multi-port buffer (see figures 3, 5-7; abstract). Hendel does not specifically disclose the multi-port buffer comprising a plurality of buffer units each including a memory having a write block and a read

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block, port input logic, port output logic; at least one multiplexer including an output coupled to the memory of one of the buffer units, a first input coupled to the port input logic of the one buffer unit, a second input coupled to the memory of another of the buffer units; a flow control logic to switch the multiplexer between its first and second inputs. However, Raza discloses a multi-port buffer including memory having a write and read blocks, port input/output logics, and flow-control logic (see figures 2 and 3b; col. 2, lines 42-62; col. 4, lines 44-63) and implicitly discloses a multiplexer (see col. 4, lines 37-39 where Raza teaches that additional circuitry may be required to select one of the queues for reading and writing of data). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to arrange the multi-port buffer as taught by Raza and to include a multiplexer in the system of Hendel in order to control and effectively use of the memory buffer.

Regarding claims 38 and 40, Hendel discloses a multi-stage switch (see figure 6).

Regarding claim 42, Hendel does not specifically disclose the use of NGIO protocol. However, to use NGIO protocol or any other well-known protocols is a matter of choice. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the NGIO protocol in order to meet the design criteria of a particular implementation.

Response to Arguments

6. Applicant's arguments with respect to claims 27-49 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Small (6,578,104, Erimli (6,618,390), and Shemla (5,809,557).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian D Nguyen whose telephone number is (571) 272-3084.

The examiner can normally be reached on 7:30-6:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



10/26/04

**BRIAN NGUYEN
PRIMARY EXAMINER**